

**REMARKS**

Claims 1-35 are pending in the present application, where claims 15-35 are withdrawn from consideration. By this amendment, claim 12 is amended, claims 15-35 are cancelled, and claim 36-61 are added. Accordingly, claims 1-14 and 36-61 are currently under consideration. Applicant respectfully submits that the claims under consideration are allowable.

Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. No new matter has been added.

The specification has been amended for correction of inconsistencies and informalities. In particular, reading a hologram is more consistently described through use of a "reference beam" (e.g., as in claims 15-35). Note also the description of reading a hologram at page 1, lines 23-23. No new matter has been added.

**Claim Rejections Under 35 USC § 112**

Claim 12 stands rejected under 35 U.S.C § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Claim 12 has been amended to add additional limitations not recited in claim 1.

Applicant respectfully requests that the above-cited rejection under 35 U.S.C § 112, second paragraph, be withdrawn.

**Claim Rejections Under 35 USC § 102**

Claims 1, 5, 6, 8, 12, and 13 stand rejected under 35 U.S.C. § 102(a) as being anticipated by FUJI XEROX (JP 2000-268380 A). Applicant respectfully traverses this rejection.

Claim 1 defines a method for monitoring diffraction while recording a hologram. As defined by claim 1, the method includes *"recording a hologram in a holographic medium from an interference between the data beam and the reference beam"* and *"measuring an offset component in an output arm of the data beam."* That is, *"the data beam"* occurs for *"recording a hologram in a holographic medium from an interference between the data beam and the reference beam"* and for *"measuring an offset component in an output arm of the data beam."*

By contrast, recording and measuring operations are not connected by a common data beam in FUJI XEROX. Rather, these operations are carried out in sequence. This distinction is noted in the Examiner's rejection: "In reading a multiplexed hologram in which an alignment pattern has been stored as an amplitude-encoded hologram, an S-polarized replica of the reference beam causes the reconstructed beam to contain the alignment image as an S-polarized component, and to contain the second multiplexed image as a P-polarized component." (emphasis added, Office Action, page 3, line 13.) This distinction is also made clear in the translated description section of the cited reference: "[0024] Thus, after carrying out multiplex record, when the intensity-modulation type hologram and polarization modulation type hologram of an optical recording medium read to the field by which multiplex record is carried out and irradiate light, an intensity-modulation type hologram and a polarization modulation type hologram are simultaneously reproducible as the diffracted light the diffracted light and the polarization direction cross at right angles mutually." (emphasis added, FUJI XEROX translation, p. 3.) Further, this distinction is made clear in the English abstract for the cited reference: "First, signal light 5 of P polarization for retaining data information according to space intensity distribution and including an alignment pattern is obtained, and a hologram is recorded into an optical storage medium 10 by a reference light 6 of P polarization. Then the signal light 5 is broken, reading light 6 of S polarization is applied to the optical storage medium 10, ..." (emphasis added, FUJI XEROX, English abstract)

The above-cited characteristic features of the present invention, defined clearly in claim 1 of the present invention, are not disclosed in the cited reference. Therefore, claim 1 is allowable over the cited reference. Because they depend directly or indirectly from claim 1, claims 2-7 and 36 are likewise allowable over the cited reference.

Claim 8 defines an apparatus for recording a hologram. As defined by claim 8, the apparatus includes "*a holographic medium for recording a hologram from an interference between the data beam and the reference beam*" and "*a polarizing beam splitter for separating an offset component from an output arm of the data beam.*" That is, "*the data beam*" occurs for "*a holographic medium for recording a hologram from an interference between the data beam and the reference beam*" and for "*a polarizing beam splitter for separating an offset component from an output arm of the data beam.*" For the reasons presented above in support of claim 1, claim 8 is allowable over the cited reference. Because they depend directly or indirectly from claim 8, claims 9-14 are likewise allowable over the cited reference.

Applicant respectfully requests that the above-cited rejection under 35 U.S.C. § 102 be withdrawn.

Applicant submits that these claims are distinguishable over the cited reference and all references of record.

#### New Independent Claims

New independent claim 37 defines a method for recording a hologram. As defined by claim 37, the method includes "*recording a hologram in a holographic medium from an interference between the data beam and the reference beam*", and "*measuring an offset component in an output arm of the data beam.*" For the reasons presented above in support of claim 1, claim 37 is allowable over the cited reference. Because they depend directly or indirectly from claim 37, claims 38-40 are likewise allowable over the cited reference.

New independent claim 50 defines an apparatus for recording a hologram. As defined by claim 50, the apparatus includes "*a holographic medium for recording a hologram from an interference between the data beam and the reference beam*" and "*a polarizing beam splitter for separating an offset component from an output arm of the data beam.*" For the reasons presented above in support of claim 8, claim 50 is allowable over the cited reference. Because they depend directly or indirectly from claim 50, claims 51-61 are likewise allowable over the cited reference.

Applicant submits that these claims are distinguishable over the cited reference and all references of record.

**CONCLUSION**

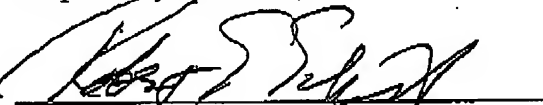
All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and a Notice to that effect is earnestly solicited. If it is determined that a telephone conference would be helpful in advancing this case to an allowance, the Examiner is invited to contact the undersigned by telephone.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 495812001400. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

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